

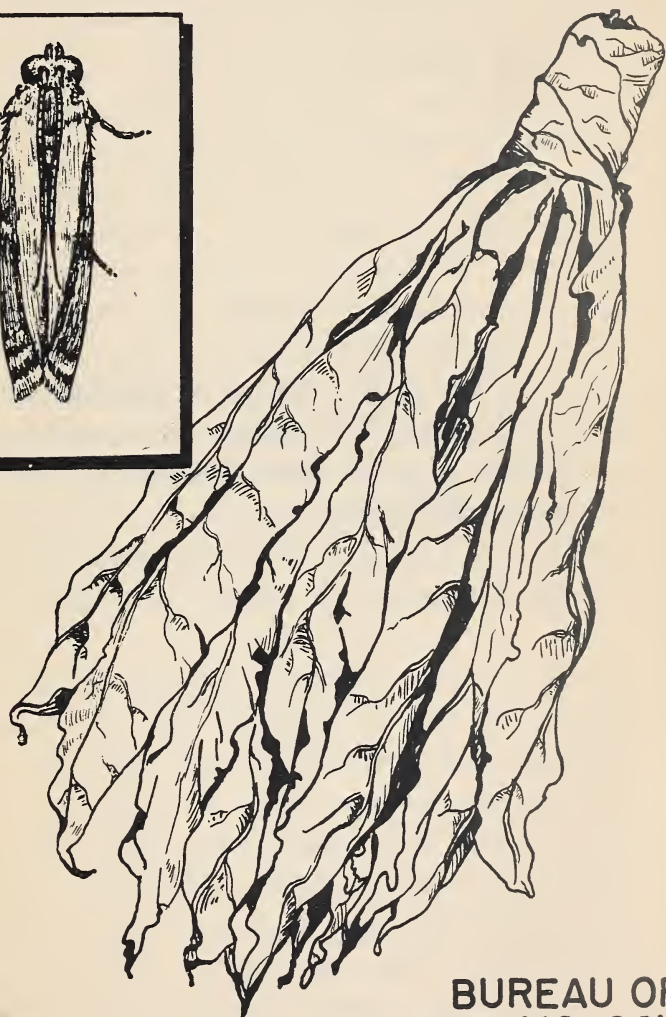
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CONTROL OF INSECTS IN STORED TOBACCO WITH PYRETHRUM-OIL SPRAY



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CONTROL OF INSECTS IN STORED TOBACCO WITH PYRETHRUM-OIL SPRAY

The tobacco moth attacks flue-cured and Turkish types of leaf tobacco while in storage. The cigarette beetle is also a pest of these tobaccos, as well as of cigar types of leaf tobacco and all forms of manufactured tobacco. Much flue-cured tobacco is stored in open-type warehouses, which cannot be readily fumigated. In these warehouses the tobacco moth is more important.

The tobacco moth must come out of the tobacco to mate, but the cigarette beetle can mate and lay eggs in close confinement. Adults of both insects emerge from the tobacco and fly about. This flight provides an opportunity for control.

Pyrethrum-oil spray will kill practically all the insects in the air space of a building. If the insecticide is applied often enough to kill the adults before they have laid many eggs, the infestation can be controlled. Since some cigarette beetles do not seem to emerge from the tobacco, the spray is more effective against the tobacco moth.

Pyrethrum dust will kill tobacco insects, but a pyrethrum-oil spray is more effective, is cheaper, and leaves no undesirable residue. The spray was used to protect 120,000,000 pounds of

flue-cured tobacco in 1948 with no observable effect on the taste, aroma, appearance, or aging of the tobacco.

Although originally designed for use in open-type warehouses, pyrethrum-oil spray has also been found satisfactory in closed-type storages. It is not a substitute for fumigation, although it may enable a warehouseman to reduce the number of fumigations required. A spray does not penetrate the hogsheads or bales and kill the young insects in the tobacco. It cannot be depended upon to control a heavy, deeply established infestation of the cigarette beetle. However, when properly used, pyrethrum-oil spray should control any infestation of the tobacco moth.

Use of Suction Light Traps

To determine when to spray it is desirable to install a suction light trap in every warehouse unit in advance of the earliest known emergence of the insects in the locality. Traps should usually be started at Charleston, S. C., by March 1; in eastern and central North Carolina from April 1 to 15; and at Richmond, Va., by May 1. In exceptionally early springs it may be necessary to start them sooner.

Traps should be operated continuously and counts made weekly of the catch from each trap. Spraying should be begun when the weekly catch reaches 10 tobacco moths or 10 cigarette beetles. It should continue until the catch drops below this number.

The Spray

Pyrethrum extract may be purchased in various strengths, to contain 2, 10, 20, or even 30 percent of pyrethrins. To obtain a spray ready for use it is only necessary to add the required amount of extract to the diluent oil and agitate slightly.

Tobacco absorbs moisture readily, and excessive moisture induces molds and storage rots. Therefore, the diluent used for this spray is a light, highly refined, very volatile oil having the following specifications: Maximum specific gravity at 60° F. 0.797; flash point 175° F., colorless, and with no kerosene odor. This oil is so volatile that all traces vanish within a few hours.

It is usually more economical for a warehouseman to mix his own spray. However, a person with only one or two warehouses may find it more convenient to buy a ready-mixed spray. A spray containing 0.2 percent of pyrethrins is recommended for use against the tobacco moth, and one containing 1 percent of pyrethrins against the cigarette beetle. The dosage used should be approximately 3 fluid ounces per 1000 cubic feet of air space. At this rate 1 gallon will treat about 40,000 cubic feet of space.

After 10 or 15 warehouses have been sprayed, the filters in the nozzles and in the machine should be cleaned.

The degree of atomization of the spray is important. Very fine sprays of the fog, mist, or aerosol type are not

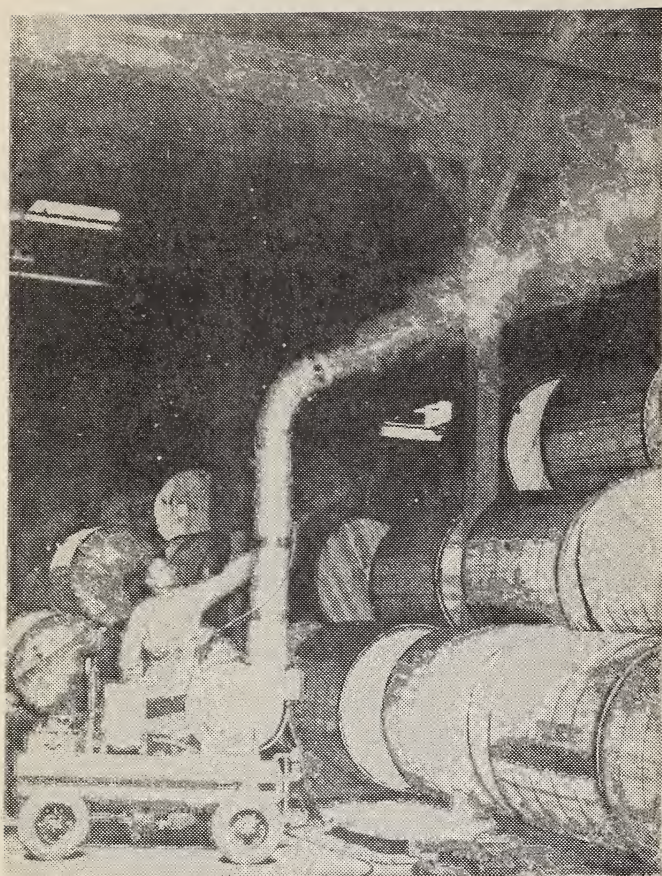
so satisfactory as a coarser and wetter spray. The fog-type sprays are fairly effective against the tobacco moth, but quite ineffective against the cigarette beetle. Even against the tobacco moth the ultra-fine mist has little, if any, advantage. It is no more economical--in fact, often more expensive--does not give adequate coverage so readily, and is impracticable in open-type warehouses.

The most efficient type of spray is one that remains suspended in the air for 5 to 10 minutes. If the spray settles in less than 5 minutes, satisfactory coverage is not obtained. If it remains suspended more than 10 minutes, it is too fine to be effective against the cigarette beetle.

Precautions--Only power sprayers with spark-proof motors and switches and heavy-duty, rubber-jacketed extension cord containing a grounding wire should be used. Since any oil is flammable under certain conditions, all precautions recommended by the fire-insurance underwriters should be followed.

Application of Spray

A mobile power sprayer (see photo opposite) designed to blow the spray over racked hogsheads of tobacco has been found to be the most satisfactory type. The sprayer should be equipped to blow the spray a distance of 100 feet.



Spraying tobacco warehouse with power sprayer.

Move the sprayer along the aisle very slowly and bring it to a complete stop every 15 to 20 feet, to give the machine time to roll the cloud of spray to the back of the building. Do not move the sprayer too rapidly, or many insects will escape the spray. Allow at least 20 minutes for spraying a warehouse of 200,000 to 300,000 cubic feet. Direct the spray down the aisle, paying especial attention to the areas around the doors, as well as those over and between the racked hogsheads. Spray one side of the warehouse as you go down the aisle and the other side as you come back.

Interval Between Applications

A warehouse should be sprayed weekly, preferably on the same day each week. Spray applications should be begun as soon as the adults become active in the spring and repeated as long as insects are flying in the warehouse. It must be kept in mind that the aim of spraying is to prevent an infestation from developing. If spraying is discontinued because of a light infestation, the adults are able to lay eggs and perhaps a new generation may develop before their presence is suspected.

Warehouse Screening

For best results from space sprays, the warehouse should be screened with fine wire gauze. An 18-mesh gauze made of wire 0.02 inch in diameter is satisfactory, but one of 20 mesh is preferable.

